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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,603	06/27/2003	Curtis A. Richardson	89190.022103/DP309242	7612
22851	7590	02/13/2006	EXAMINER	
DELPHI TECHNOLOGIES, INC. M/C 480-410-202 PO BOX 5052 TROY, MI 48007			ALEJANDRO, RAYMOND	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/607,603

Applicant(s)

RICHARDSON ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/19/05 & 01/13/06.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 5-7 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

This office action is responsive to the amendments filed on 12/19/05 and 01/13/06. The applicant has overcome the objections and the 35 USC 102 rejection. Refer to the foregoing amendment for specific details on applicant's rebuttal arguments. However, the present claims are finally rejected over newly discovered art as set forth hereinbelow and for the reasons of record.

### ***Claim Disposition***

1. Claims 1-4 and 8 have been cancelled.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the WO 01/17048 publication (hereinafter referred to as “Nagai”) (*Note: US patent 6720103 to Nagai has been herein employed and cited as it belongs to the same family patent of WO'048 publication and was published in English language*) in view of Wakamatsu 6231053.

Nagai discloses a fuel cell (TITLE). In this respect, Nagai discloses a fuel cell assembly comprising pair of counter-posed gasket sheets 6 and 7 supporting an MEA (*membrane electrode assembly*) (ABSTRACT). Nagai discloses the use of two integrated members of gasket sheets being counterposed to each other so that the gasket can face each other, and the extruded peripheral part of an electrolyte membrane is inserted into between the inner peripheral pinching parts of the frame-shaped gasket sheets (COL 4, lines 3-15). *Thus, the region where the electrolyte membrane is inserted constitutes the opening.*

Nagai describes how an MEA is supported by the gasket sheets (COL 4, lines 3-30); and the fuel cell stack (COL 3, lines 12-18). *Thus, Nagai envisions using the gasket sheets to contact or directly face a fuel cell stack component.*

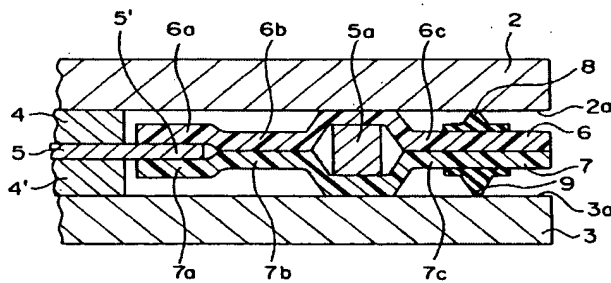
Nagai also discloses that spacer sheet 5a is inserted between the gasket sheets (COL 4, lines 10-15). Thus, MEA is supported by the gasket sheets through spacer 5a and hence, MEA can be easily and accurately positioned while keeping the specific pressure constant (COL 4, lines 20-30).

Nagai discloses that in **Figure 2** the inner edge parts 6a, 7a, and underformed parts of the counterposed gasket sheets 6b-7b and 6c-7c are welded together (COL 4, lines 40-53). *Thus, Nagai's gasket sheet are bonded. Examiner's note: the limitation “diffusion bonded” is being construed as product-by-process claims and therefore the product itself does not depend on the*

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*process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. In that, it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art. In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324 (Refer to MPEP 2113: Product-by-Process Claims).*

**Figure 2** below depict the specific structure of a fuel cell unit including the gasket body formed by sheets 6 and 7 and comprising planar and non-planar regions. As evident from Figure 2 below, spacer 5a is inserted between gasket sheets 6 and 7 and an empty space is formed therebetween. That empty space is considered to constitute an air hole. Thus, the gaskets also form the gas-filled pillow structure for sealing the joint therebetween (←Emphasis supplied).



**Fig. 2**

Nagai discloses a fuel cell structure as seen and described supra. Nevertheless, the preceding prior art reference does not expressly disclose the specific metal sheets.

Wakamatsu discloses a gasket for fuel cells including a gasket body composed of a metal sheet (ABSTRACT) which is subject to bonding (ABSTRACT).

With these teachings, it would have been obvious to a skilled artisan at the time the invention was made to use the specific metal sheets of Wakamatsu as the gasket material in the fuel cell of Nagai because Wakamatsu teaches that the specific metal sheets when used as gasket precludes generation of contaminants such as ions, by the reaction of working fluids with

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material constituting the gasket body, thereby allowing high generating efficiency of the fuel cell. In addition to that, Wakamatsu discloses that such specific metal sheets effectively support the electrolytic membrane sheet in a narrow region and seals working gasses and fluids. It also permits to have the functional requirement of maintaining a constant distant between the two adjacent plates, a high level of hermetic or low permeation sealing, precluding evaporation of water and drying of the polymer electrolyte membrane and easy assembly and disassembly. Also, another advantage is that the change in the membrane's thickness cause by the pressure of the working liquid or fuel gas or temperature can be effectively absorbed by the sealing section of the specific metal sheet.

5. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the WO 01/17048 publication (hereinafter referred to as "Nagai"). (Note: US patent 6720103 to Nagai has been herein employed and cited as it belongs to the same family patent of WO'048 publication and was published in English language) in view of the Japanese publication 06-96783 (herein called 'the JP'783 ').

Nagai discloses a fuel cell (TITLE). In this respect, Nagai discloses a fuel cell assembly comprising pair of counter-posed gasket sheets 6 and 7 supporting an MEA (*membrane electrode assembly*) (ABSTRACT). Nagai discloses the use of two integrated members of gasket sheets being counterposed to each other so that the gasket can face each other, and the extruded peripheral part of an electrolyte membrane is inserted into between the inner peripheral pinching parts of the frame-shaped gasket sheets (COL 4, lines 3-15). Thus, the region where the electrolyte membrane is inserted constitutes the opening.

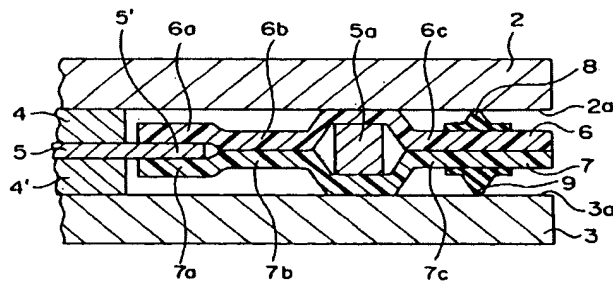
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Nagai describes how an MEA is supported by the gasket sheets (COL 4, lines 3-30); and the fuel cell stack (COL 3, lines 12-18). *Thus, Nagai envisions using the gasket sheets to contact or directly face a fuel cell stack component.*

Nagai also discloses that spacer sheet 5a is inserted between the gasket sheets (COL 4, lines 10-15). Thus, MEA is supported by the gasket sheets through spacer 5a and hence, MEA can be easily and accurately positioned while keeping the specific pressure constant (COL 4, lines 20-30).

Nagai discloses that in **Figure 2** the inner edge parts 6a, 7a, and underformed parts of the counterposed gasket sheets 6b-7b and 6c-7c are welded together (COL 4, lines 40-53). *Thus, Nagai's gasket sheet are bonded. **Examiner's note:** the limitation "diffusion bonded" is being construed as product-by-process claims and therefore the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. In that, it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art. In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324 (Refer to MPEP 2113: Product-by-Process Claims).*

**Figure 2** below depict the specific structure of a fuel cell unit including the gasket body formed by sheets 6 and 7 and comprising planar and non-planar regions. As evident from Figure 2 below, spacer 5a is inserted between gasket sheets 6 and 7 and an empty space is formed therebetween. That empty space is considered to constitute an air hole. Thus, the gaskets also form the gas-filled pillow structure for sealing the joint therebetween (←Emphasis supplied).



**Fig. 2**

Nagai discloses a fuel cell structure as seen and described supra. Nevertheless, the preceding prior art reference does not expressly disclose the specific metal sheets.

The JP'783 makes known the use of metal sheets as gaskets for better sealing in fuel cells (ABSTRACT).

In view of the aforementioned disclosures, it would have been obvious to a skilled artisan at the time the invention was made to use the specific metal sheets of the JP'783 as the gasket material in the fuel cell of Nagai because the JP'783 teaches that gaskets of metal sheets are used for better sealing in fuel cell. Thus, the JP'783 directly teaches the use of metal sheets as gaskets for the benefit of obtaining improved sealing characteristics in fuel cells.

6. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the WO 01/17048 publication (hereinafter referred to as "*Nagai*"). (Note: US patent 6720103 to Nagai has been herein employed and cited as it belongs to the same family patent of WO'048 publication and was published in English language) in view of Franklin 2004/0053099.

Nagai discloses a fuel cell (TITLE). In this respect, Nagai discloses a fuel cell assembly comprising pair of counter-posed gasket sheets 6 and 7 supporting an MEA (*membrane electrode assembly*) (ABSTRACT). Nagai discloses the use of two integrated members of gasket sheets



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being counterposed to each other so that the gasket can face each other, and the extruded peripheral part of an electrolyte membrane is inserted into between the inner peripheral pinching parts of the frame-shaped gasket sheets (COL 4, lines 3-15). Thus, the region where the electrolyte membrane is inserted constitutes the opening.

Nagai describes how an MEA is supported by the gasket sheets (COL 4, lines 3-30); and the fuel cell stack (COL 3, lines 12-18). *Thus, Nagai envisions using the gasket sheets to contact or directly face a fuel cell stack component.*

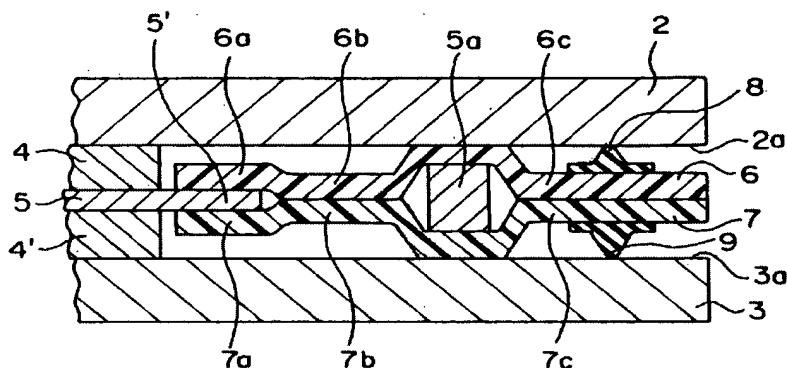
Nagai also discloses that spacer sheet 5a is inserted between the gasket sheets (COL 4, lines 10-15). Thus, MEA is supported by the gasket sheets through spacer 5a and hence, MEA can be easily and accurately positioned while keeping the specific pressure constant (COL 4, lines 20-30).

Nagai discloses that in **Figure 2** the inner edge parts 6a, 7a, and underformed parts of the counterposed gasket sheets 6b-7b and 6c-7c are welded together (COL 4, lines 40-53). *Thus, Nagai's gasket sheet are bonded. **Examiner's note:** the limitation "diffusion bonded" is being construed as product-by-process claims and therefore the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. In that, it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art. In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324 (Refer to MPEP 2113: Product-by-Process Claims).*

**Figure 2** below depict the specific structure of a fuel cell unit including the gasket body formed by sheets 6 and 7 and comprising planar and non-planar regions. As evident from Figure 2 below, spacer 5a is inserted between gasket sheets 6 and 7 and an empty space is formed

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therebetween. That empty space is considered to constitute an air hole. Thus, the gaskets also form the gas-filled pillow structure for sealing the joint therebetween (←Emphasis supplied).



**Fig. 2**

Nagai discloses a fuel cell structure as seen and described supra. Nevertheless, the preceding prior art reference does not expressly disclose the specific metal sheets.

Franklin et al disclose a fuel cell comprising a gasket comprising a plastic polymer material, an elastomeric material, a composite material, a metal or combinations thereof (CLAIMS 10 and 22).

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to use the specific metal gasket material of Franklin et al in the gasket of Nagai as Franklin et al teach the such metal gasket material allows for suitable electrical and mechanical contact. Thus, gaskets made of metallic materials incorporate metallic elements which provide satisfactory mechanical integrity while also furnishing electrically conducting characteristics complying with the electrical requirement of fuel cell configurations.

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7. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either:

a) the WO 01/17048 publication (hereinafter referred to as “*Nagai*”) in view of Wakamatsu 6231053; and/or

b) the WO 01/17048 publication (hereinafter referred to as “*Nagai*”) in view of the Japanese publication 06-96783 (herein called ‘*the JP’783*’); and/or

c) the WO 01/17048 publication (hereinafter referred to as “*Nagai*”) in view of Franklin 2004/0053099 as applied to claim 5 above, and further in view of Inagaki et al 2003/0150162.

Nagai-Wakamatsu and/or Nagai-the JP’783 and/or Nagai-Franklin are applied, argued and incorporated herein for the reasons above. However, the preceding prior art does not expressly disclose the specific vehicle.

Inagaki et al disclose a seal arrangement for fuel cells including a seal portion in the form of a gasket (ABSTRACT/SECTIONS 0010-0012). In particular, it is disclosed that seal arrangement is employed in a solid polymer electrolyte fuel cell, which is installed in, a fuel cell vehicle, but may be used in other applications (SECTION 0028).

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to use the fuel cells of Nagai-Wakamatsu and/or Nagai-the JP’783 and/or Nagai-Franklin in vehicles as Inagaki et al disclose that fuel cell arrangement using gasket elements are installed in vehicles among other applications. Particularly, fuel cells are electrochemical apparatus capable of generating electrical energy through chemical conversion, and thus, such generated energy is effectively employed in power consuming vehicles.

***Response to Arguments***

8. Applicant's arguments with respect to claims 5-7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro  
Primary Examiner  
Art Unit 1745

  
**RAYMOND ALEJANDRO**  
**PRIMARY EXAMINER**